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10/525,059	02/18/2005	Hirokazu Kobayashi	MAT-8656US	5856
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/525,059

Applicant(s)

KOBAYASHI ET AL.

Examiner

Barak Nissan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 2/18/2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 February 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 2/18/2005.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

1. The communication is in response to Application No. 10525059, filed 02/18/2004, claims 1-18 have been examined.

Priority

2. Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

Drawings

3. The drawings are objected to because the unlabeled rectangular box(es) shown in the drawings (figures 1-3 and 17-19) should be provided with descriptive text labels. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by

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the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Abstract

4. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The applicants abstract should contain proper language without using the term "means" (lines 4-8).

Claim Objections

5. **Claims 15-18** are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim.

Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

In this case, claim 14 from which claims 15-18 depend on is directed to a machine category patentable subject matter claim, i.e. "mobile router device". The limitations of claim 14 further limit the mobile router device, with the "at least one terminal device" and "mobile network including a plurality of mobile router devices" contained therein, as such the claim is hereby for the purposes of examination treated as a machine claim, i.e. "mobile router device" claim. In accordance with 37 CFR 1.75(c) one or more claims may be presented in dependent form, referring back to and further limiting another claim(s) in the same application. Further, "a claim in a dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers" and requires the dependent claim to further limit the subject matter claimed (see MPEP 2164.08).

Specifically, dependent claims 15-18 do not refer back to and/or further limit the system containing mobile router device, rather these claims refer back to and further limits the "mobility management method", as such these claims are deemed to be in improper dependent form for failing to further limit the claimed subject matter of a previous claim.

Claim Rejections - 35 USC § 112

6. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The phrase "mobile network moving

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within the backbone network” is indefinite to how one ordinary skill would implement a moving network.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims **1, 2, 4-18** are rejected under 35 U.S.C. 103(a) as being unpatentable over Korus et al. (US 6721297) in view of Shinomiya (US 2003/00371658).

9. Regarding claim 1, Korus teaches a mobile router device (col 3, lines 10-15), to which at least one terminal device attaches (col 3, lines 23-26), connects a backbone network to a mobile network moving within the backbone network (mobile router connects to a network to other network links, col 3, lines 23-32), the mobile router device (col 3, lines 10-15) comprising: [claim 1 is being treated as 35 USC 112 6th paragraph].

a means for recording a virtual address common to respective mobile router devices attaching to the mobile network. (IP packets (data) that enables mobile routers to attach to networks, col 1, lines 15-25) and producing a care of address (abstract) with respect to the virtual address (IP addresses, col 1, lines 15-25) and usable by the mobile router device per se at a location to which the router device moves; (abstract) and

a means for generating and transmitting a binding update message (abstract) which makes the virtual address (IP addresses, col 1, lines 15-25) corresponding to the care of address (abstract) when the mobile router device (abstract)

However, Korus does not teach a means for determining whether or not the mobile router device works as a master router.

Shinomiya teaches determining whether or not a router device works as a master router (master router, Shinomiya, [0011]) that can connect the mobile network to the backbone network; (network is connected to other networks through a router, Shinomiya, [0005]);

It would have been obvious to one of ordinary skilled in the art at the time the invention was made having the teachings of Korus and Shinomiya before them, to modify Korus's teachings to modify the mobile router to work as master router taught by Shinomiya. One would be motivated to combine these teachings because upon movement in the mobile network, the mobile router working as master router can still obtain care of address on behalf of the attached mobile network hosts and create a binding between the mobile and the virtual address.

10. Regarding claim 2, Korus together with Shinomiya taught the mobile router device (col 3, lines 10-15) of claim 1, as described above. Korus further teaches wherein the virtual address (IP addresses, col 1, lines 15-25) is used as a real address (IP addressable,"which column" lines 26-36) assigned to any one of the respective mobile router devices attaching to the mobile network (col 3, lines 10-15).

11. Regarding claim 4, Korus and Shinomiya taught the mobile router device (Korus, col 3, lines 10-15) of claim 1, as described above.

Shinomiya teaches a means for storing a sequence number (Shinomiya, 0022), into a master router advertisement packet and for transmitting the packet (Shinomiya, [0022]) when the mobile router device (Korus, mentioned in claim 1, col 3, lines 10-15) works as the master router (Shinomiya, [0011]). However, Shinomiya does not disclose, of the binding update message (Korus mentioned in claim 1, col 1, lines 54-59).

12. Regarding claim 5, Korus together with taught the mobile router device (col 3, lines 10-15) of claim 4, as described above.

Korus does not disclose wherein the master router advertisement packet uses a virtual router advertisement in accordance with a virtual router redundancy protocol.

Shinomiya further teaches, wherein the master router advertisement packet uses a virtual router advertisement in accordance with a virtual router redundancy protocol (Shinomiya, [0051]).

It would have been obvious to one of ordinary skilled in the art at the time the invention was made having the teachings of Korus and Shinomiya before them, to modify Korus's teachings to include the mobile router device to work as master router where it has a message packet taught in Shinomiya using the virtual router advertisement in accordance with a VRRP in Korus. One would be motivated to combine these teachings because VRRP(virtual router redundancy protocol) is used for changing priority from master router to another virtual

router(i.e. backup router, 0051) for continuing the processing if the advertisement packet fails to be transmitted in the network.

13. Regarding claim 6, Korus together with Shinomiya taught the mobile router according to claim 4, as described above. Shinomiya further teaches, wherein the master router advertisement packet (Shinomiya, [0051]).

Korus teaches IPv6 router advertisement message (col 2, lines 25-30).

It would follow that in modifying Korus with Shinomiya the advertisement packet would use IPv6 router advertisement message. Specifically, it would have been obvious to one of ordinary skilled in the art at the time the invention was made having the teachings of Korus and Shinomiya before them, to modify Korus's teachings to include IPv6(Internet protocol version 6) taught in Korus being used by the master router advertisement packet in Shinomiya teachings. One would be motivated to combine these teachings because IPv6 was made for a larger address space which helped routers transmit more packet messages in networks.

14. Regarding claim 7, Korus and Shinomiya teachings taught the mobile router device (Korus, col 3, lines 10-15) of claim 1, as described above.

Shinomiya teaches a means for [claim 7 is being treated as 35 USC 6th paragraph) receiving a master router advertisement packet which is transmitted by (Shinomiya, [0019]), notifies the mobile router device of the another mobile router device working as the master router (mentioned in claim 1); (uses the backup router to process the packets if the master router fails to transmit, Shinomiya, [0046]).

However, Shinomiya does not mention transmitted by another mobile router device (Korus, col 3, lines 23-32).

a means for recording a sequence number (Shinomiya, 0022) of the binding update message (Korus mentioned in claim 1, col 1, lines 54-59) contained in the master router advertisement packet received in order to use the sequence number (Shinomiya, 0132) for a case when the mobile router device per se becomes the master router (mentioned in claim 1),

Korus does not teach when the mobile router device works as a backup router, however, Shinomiya mentions about the sequence of information regarding the master router receiving packets of messages and if it fails the backup router will take over the process. [Shinomiya, 0022]

It would have been obvious to one skill in the art at the time the invention was made made having the teachings of Korus and Shinomiya before them, to modify Korus's teachings to include the mobile router device to work as master router or a backup up router where the sequence of binding update message in Korus can be transmitted by the routers in Shinomiya within the networks. One would be motivated to combine these teachings because mobile router or any type of router (master or backup) are used to attached networks connecting to other networks by the use of obtaining the IP addresses that have the message packets that is being transmitted between the routers. Shinomiya states, "a master router which actually performs routing processing; and a backup router which performs routing processing in place of the master router when the master router fails." (0009)

15. Regarding claim 8, this claim comprises, the mobile router device of claim 7, wherein the master router advertisement packet uses a virtual router advertisement in accordance with a virtual router redundancy protocol is substantially the same steps discussed by each respective limitations in claim 5, thereby same rationale of rejection is applicable.

16. Regarding claim 9, this claim comprises, the mobile router device of claim 7, wherein the master router advertisement packet uses IPv6 router advertisement message is substantially the same steps discussed by each respective limitations in claim 6, thereby same rationale of rejection is applicable.

17. Regarding claim 10, Korus together with Shinomiya taught the mobile router devices as defined in claim 1, as described above. Korus teaches a mobile network system (abstract) comprising:

a plurality of the mobile router devices (Korus uses nodes as defined as router devices, col 14, lines 40-41)

at least one terminal device attaching to the mobile router devices; (col 3, lines 10-15)

a home agent device for managing movements of the mobile router devices. (Korus, [col 4-5, lines 55-67, 1-6]) Korus teaches the use of home agent device for managing the mobile node (i.e. mobile router), col 4, lines 55-60)

18. Regarding claim 11, Korus together with Shinomiya teaches a mobile network system (abstract) of claim 10, as described above. Korus further teaches wherein at least one of the mobile router devices (col 3, lines 10-15) has a physical interface (interface, col 5, lines 17-23) to a backbone network, a type of

which interface is a different from those of other mobile router devices. In such one embodiment, Korus describes (Fig 4.) the mobile router monitors and selects appropriate external network interfaces that's available to different mobile networks. (col 3-4, lines 63-67, 1-3).

19. Regarding claim 12, Korus taught in view of Shinomiya, the mobile network system of claim 10, as described above in claim 1, wherein each one of the mobile router devices uses a virtual address (Korus, i.e. IP address, abstract) common to the others at a side to backbone network and implements a virtual router redundancy protocol (Shinomiya teaches VRRP which enables a router working as a master router if its qualified, [0050]) at a side to a mobile network, wherein when one of the mobile router devices works as a master router (mentioned in claim 1), the master router uses the common virtual address for communication. (virtual router such as master router having a common address, Shinomiya, 0018)

20. Regarding claim 13, Korus together with Shinomiya teaches a mobile network system (abstract) of claim 12, as described above. Korus further teaches wherein one of the mobile router device working as the master router (mentioned in claim 1) uses the common virtual address (Shinomiya, 0018) and a care of address generated corresponding to the common virtual address for transmitting a binding update message (Korus, abstract).

However, Shinomiya does not teach binding update message to be used for a mobility management to the home agent device.

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Korus teaches transmitting a binding update message to be used for a mobility management to the home agent device. [col 4-5, lines 55-67, 1-6].

It would have been obvious to one skill in the art at the time the invention was made made having the teachings of Korus and Shinomiya before them, to modify Korus's teachings to include the mobility management to the home agent device taught in Korus for transmitting messages of the master router taught in Shinomiya in Korus teachings. One would be motivated to combine these teachings because the home agent is also a correspondent node that performs mobility management functions.

21. Regarding claim 14, Korus discloses a mobility management method of a mobile router device(col 5, lines 1-3) attaching to a mobile network system in view of Shinomiya teachings of the master router described in the claims above, which system comprising:

at least one terminal device (Korus, col 3, lines 23-26);

a mobile network including a plurality of mobile router devices, (Korus col 14, lines 40-41) to which the terminal device attaches, for coupling the mobile network to a backbone network (referring back to claim 1 where the limitations are substantially similar, rationale of rejection is applicable); and

a home agent device for associating a home address with a care of address and managing both of the addresses (Korus discusses home agent device with respect to an address, (col 4-5, lines 55-67, 1-6), abstract).

wherein when the mobile network is connected to a home network (Korus,

col 5, 60-65) and when one of the mobile router devices working as a master router (mentioned in claims above with the teachings of Shinomiya) is to still work as the master router after a movement, the management method associates a care of address corresponding to a virtual address (Korus, IP address, abstract) generated after the movement with the virtual address and registers the care of address with the home agent device (Korus, col 4-5, lines 55-67, 1-6), or when one of the mobile router devices working as a backup router is to become the master router after the movement (mentioned in claim 7), the managing method associates the care of address corresponding to the virtual address (Korus, abstract) generated after the movement with the virtual address and registers the care of address with the home agent device (steps performed by mobile routers in obtaining a multicast care of address, Fig. 5).

22. Regarding claim 15, Korus together with Shinomiya taught the mobility management method as defined in claim 14, as described above. Korus further teaches wherein the virtual address is any one of physical addresses to be used in physical interfaces, to the backbone network, (Korus, (Fig 4.) network interfaces that's available to different mobile networks, col 3-4, lines 63-67, 1-3) when each one of the mobile router devices attaching to the mobile network is connected to the home network (col 8, lines 36-40).

Korus explains that the packets are sent to the home address where are routed through the network to the mobile router's home network (i.e. mobile network attached to home network). One ordinary skilled in the art would know

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that the virtual addresses are used within the interface to store packet information within any network.

23. Regarding claim 16, Korus taught the mobility management method as defined in claim 14 with the teachings of Shinomiya, as described above, the method puts the virtual address and a sequence number (Shinomiya, 0022) of a binding update message (Korus, abstract) to be transmitted to the home agent device (Korus, col 4, lines 55-60) into a master router advertisement packet to be transmitted (Shinomiya, [0022] to the mobile network for notifying the home agent device of the mobile router device being to work as the master router (as mentioned in the above claims, [master router, Shinomiya, 0011]). This claim comprises similar steps discussed in the above claims, thereby same rationale of rejection is applicable.

24. Regarding claim 17, Korus taught the mobility management method as defined in claim 16 with the teachings of Shinomiya, as described above. Korus further teaches the master router advertisement packet is a virtual router advertisement packet to be used by a virtual router redundancy protocol (limitations are similar in claims 5 and 8, rationale rejection is applicable) implemented in the mobile router device at a side to the mobile network. (Korus, col 3, lines 10-15)

25. Regarding claim 18, Korus taught the mobility management method as defined in claim 16 with the teachings of Shinomiya, as described above in claim 6 and 9, wherein the master router advertisement packet (Shinomiya, 0051) includes IPv6 (Korus, col 2, lines 25-30) router advertisement message to be

transmitted from the mobile router device working as the master router (mentioned in the above claims) to a side of the mobile network of the mobile router device (Korus, col 3, lines 10-15). The limitations of the claim was substantially similar to the above claims 6, 9, and 17, thereby rationale of rejection is applicable. 26. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Korus et al. (US 6721297) in view of Shinomiya (US 2003/0037165) in further view of Simpson (US 7234001).

27. Regarding claim 3, Korus and Shinomiya taught the mobile router device according to claim 1, as described above.

Korus and Shinomiya taught as mentioned in claim 1, a means for determining whether or not the mobile router device (Korus, col 3, lines 10-15) per se works as the master router (Shinomiya, [0011]), however Shinomiya also teaches the master router works in response to the priority [Shinomiya, 0070].

Shinomiya teaches a means for changing a priority which determines the master router and a backup router (Shinomiya, [0070]), however does not teach in response to the quality of the link; (Simpson, col 3, lines 54-66).

However, Korus together with Shinomiya does not teach a means for monitoring quality of a link connected to the backbone network;

Simpson teaches monitoring quality of a link connected to the backbone network (Simpson, col 3, lines 54-66) [claim 3 is being treated as 35 USC 112 6th paragraph]

Simpson discloses internal router automatically maintains a backup link in a dormant state until a network failure affects some communication with the primary router. (interpreted as master router mentioned in Shinomiya teachings)

Simpson, in the same field of applicant's endeavor, teaches the monitoring of the link to some network and it would be obvious to one ordinary skilled in the art that, utilizing Simpson teachings with Shinomiya's system because " when switching over to the master router, a backup router having the highest priority of the whole backup routers is selected." [Shinomiya, 0070].

It would have been obvious to one of ordinary skilled in the art at the time the invention was made having the teachings of Korus and Shinomiya combined with Simpson's teachings before them, to modify Korus's teachings to include the mobile router to work as master router for highest priority taught in Shinomiya with monitoring the quality of a link to the network in Simpson's teachings in Korus. One would be motivated to combine the teachings of Korus and Shinomiya with Simpson's teachings because in response to the highest priority of a router such a master router can process much better to a link that was monitored for best quality for connecting networks.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barak Nissan whose telephone number is (571)-270-3632. The examiner can normally be reached on Mon-Thrus 7:30am-5:00pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Beatriz Prieto can be reached on (571)-272-3902. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Barak Nissan

B.N.

James K. Smith
PRIMARY EXAMINER
TC 2100